



Accompanying Documents

Accompanying this response are the following documents:

1. Marked-up copy of the claims, showing the amendments made herein (Appendix A);
2. Copy of the currently pending claims, incorporating the amendments made herein (Appendix B);
3. Sequence Listing for the contiguous amino acid sequence shown at positions 29 through 259 of Figures 4A-4C; and
4. Copy of Brenner, Chothia, and Hubbard (1998) *Proc. Natl. Acad. Sci. USA* 95: 6073-6078.

I. AMENDMENTS

In the Specification:

Please amend the specification at page 18, lines 20-35, as follows:

As shown in Figures 4A-4C, the *S. uberis* CAMP factor gene encodes a preprotein of about 256 amino acids (amino acid residues 1 through 256, inclusive, of Figures 4A-4C) that includes an N-terminal signal sequence approximately 28 amino acids in length. The precursor molecule has a calculated molecular weight of 28,363 Da. The mature *S. uberis* CAMP factor thus includes amino acid residues 29 through 256 (SEQ ID NO:5), inclusive, as depicted in Figures 4A-4C. As discussed further below, the portion of the CAMP factor gene encoding the signal sequence can be included in constructs that encode the CAMP factor to direct secretion of the CAMP factor upon expression. Additionally, the CAMP factor signal sequence and the nucleic acid sequence encoding the same can be used with heterologous proteins and nucleic acid molecules, to aid in the

Please amend the specification at page 34, lines 18-31, as follows:

A deposit of biologically pure cultures of the following strains was made with the American Type Culture Collection, 10801 University Boulevard, Manassas, VA 20110-2209, under the provisions of the Budapest Treaty. The accession number indicated was assigned after successful viability testing, and the requisite fees were paid. The designated deposits will be maintained for a period of thirty (30) years from the date of deposit, or for five (5) years after the last request for the deposit, whichever is longer. Should a culture become nonviable or be inadvertently destroyed, or, in the case of plasmid-containing strains, lose its plasmid, it will be replaced with a viable culture(s) of the same taxonomic description.

Please amend the specification at page 43, lines 20-29, as follows:

S. uberis CAMP factor, encoded by pGH-CAMP, was prepared from inclusion bodies as described in Example 1. The antigen was formulated in VSA3 adjuvant which is a combination of EMULSIGEN PLUS from MVP Laboratories, Ralston, Nebraska and Dimethyldioctadecyl ammonium bromide (DDA) from Kodak (Rochester, NY). The final concentration was 25 µg per ml of CAMP factor, 30% EMULSIGEN PLUS, 0.9% TWEEN-80, and 2.5 mg per ml of DDA. The dose volume was 2 cc containing 50 µg of recombinant antigen.

Please amend the specification at page 45, line 11 to page 46, line 2, as follows:

Total Ig titers for CAMP factor were determined by an indirect ELISA. Immunolon-2 plates were coated with antigen in carbonate buffer. Prior to use, the plates were blocked with TBST (100 mM Tris Cl, pH 8.0; 150 mM NaCl; 0.05% TWEEN-20) and 3% BSA for 1 hour. After blocking, the plates were washed with distilled water.

100 µl of TBST (100 mM Tris Cl, pH 8.0; 150 mM NaCl; 0.05% TWEEN-20) was added to each well.

100 µl of 1% BSA in TBST was added to each well. The plates were washed with distilled water.